

REMARKS**Claim Disposition**

Claims 1 -- 50 are pending in the application. Claims 1 -- 7, 11 -- 14, 17, 19 -- 25, 27 -- 29, 31 -- 33, 38, 41, 42, and 46 -- 50 have been rejected. Claims 8 -- 10, 15, 16, 18, 26, 30, 34 -- 37, 39, 40, and 43 -- 45 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 6, 8, 11 -- 20, 26, and 41 have been amended to correct typographical errors.

Objections

The disclosure has been objected to because of the missing application information in lines 12-13 of page 1 of the specification. Applicants have amended the first paragraph of page 1 and the second full paragraph of page 11 of the specification to address the Examiner's concerns.

Claim Rejections 35 U.S.C. §112

Claims 22 - 45 and 49 have rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states:

"Independent base claim 22 either recites a method or an "extensible N-tiered software application" comprising one processing unit, one memory store, various rules, and structures (lines 1-11 of the claim). However, it is unclear how a method can comprise real-world elements (such as a processor). It is also unclear how software could comprise such elements. Appropriate correction is required."

Applicants appreciate the Examiner's observations and have amended the Claim 22 accordingly to address the Examiner's concerns.

Claim Rejections - 35 USC § 103

Claims 1 - 7, 11 - 14, 17, 19 - 25, 28, 29, 31 - 33, 38, 41, 42, and 46 - 50 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth et al. U.S. Patent No. 5,457,797, hereinafter referred to as Butterworth; in view of Pree et al. entitled "Automated Support for Software Development with Frameworks", hereinafter referred to as Pree. Applicants respectfully traverse. With regard to Claim 1, the Examiner states:

"Butterworth disclosed a computing system for creating an extensible N-tiered software application (column 5, lines 9-15), comprising:

- a. at least one processing unit (*inherent to executable application software*);
- b. at least one memory store operatively connected to the processing unit (*inherent to executable application software*);
- c. extensible N-tiered creation software (*column 5, lines 9-15*), executable within the at least one processing unit, comprising a plurality of predetermined extensible N-tier architecture rules (*column 5, lines 22-24*); and
- d. at least one extensible tier, capable of residing in the memory store (*column 25, lines 30*), further comprising:

Butterworth did not explicitly state extensible tier comprising: a framework that specifies a basic design structure for software components categorized as belonging to the extensible tier, the framework further comprising base software components and a set of standard interfaces for any software component categorized as belonging to the tier; and a logically grouped set of a predetermined number of executable software components compliant with the tier framework, each software component further capable of communicating with at least one other software component. Pree demonstrated that it was known at the time of invention to utilize frameworks of components for application development (Abstract), along with standard interfaces (page 124, section 2.1) and standard predetermined components (Abstract). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Butterworth's partitionable tier system with tier frameworks and standard components and interfaces as found in Pree's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide an improved productivity and software development automation (Pree: Abstract)."

Applicants respectfully contend that explanation in the Office Action mischaracterizes the teachings of Butterworth and/or Pree and that the cited references do not teach or disclose each element of the invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

With regard to Claim 1, Applicant respectfully contends that neither Butterworth nor Pree teach or disclose each element of the invention. Specifically, neither Butterworth nor Pree teach or disclose, “extensible N-tiered creation software, ..., comprising a plurality of predetermined extensible N-tier architecture rules”. To support the rejection, the Examiner relies, on the disclosure of Butterworth at Col. 5 lines 9 – 15. However, it is evident from the disclosure of Butterworth, that there is no disclosure whatsoever regarding **extensible N-tiered creation software**, or a plurality of predetermined **extensible N-tier architecture rules** in Butterworth at Col. 5, lines 9 – 15. Furthermore, Butterworth at the specified citation specifically addresses **partitioning** of an application program and allocating the partitions of the application to one or more target computers. See Col 5 lines 9 – 23. Conversely, Applicants’ invention is directed to the creation of software applications based on a tiered architecture with a selected framework and defined interfaces. Moreover, continuing with Claim1, neither Butterworth nor Pree teach or disclose, “at least one extensible tier”. To support the rejection, the Examiner relies, on the disclosure of Butterworth at Col. 25 line 30. However, it is evident from the disclosure of Butterworth, that there is no disclosure whatsoever regarding at least one extensible tier in Butterworth at Col. 25, line 30. In fact, the disclosure of Butterworth at Col. 25, line 30 is directed to “loading said first service object on said first computer of said second heterogeneous

environment” The teaching of Butterworth at Col. 25, line 30 is with respect of loading services of a **partitioned application** on a target computer, *nothing* in the teaching is directed to an extensible tier.

Moreover, neither Butterworth nor Pree teach or disclose, “a framework that specifies a basic design structure for software components **categorized as belonging to the extensible tier**, the framework further comprising base software components and a set of standard interfaces for any software component **categorized as belonging to the tier**”. To support the rejection, the Examiner relies on the disclosure of Pree in the Abstract and page 124 section 2.1, suggesting that “Pree demonstrated that it was known at the time of invention to utilize frameworks of components for application development (Abstract), along with standard interfaces (page 124, section 2.1) and standard predetermined components”. Applicants respectfully suggest that the Examiner has mischaracterized the teachings of Butterworth and/or Pree as well as the claimed invention. Applicants are not suggesting that the existence of a framework and components is the invention, rather, or more specifically, “a framework further comprising ... components ... and a set of standard interfaces for any ... component ... **belonging to the tier**”. However, it is evident from the disclosure of Butterworth, that there is no disclosure whatsoever with regard to an extensible tier, therefore there is no disclosure of teaching in Butterworth or Pree with respect to a framework further comprising ... components ... and a set of standard interfaces for any ... component ... **belonging to the tier**.

Therefore, because neither Butterworth nor Pree disclose or teach one or more elements of the invention they cannot render Applicants’ claims unpatentable. Thus, Claims 1 is allowable, the rejections are improper, and they should be withdrawn.

In addition, Claims 2 -- 21 include the same limitations as Claim 1, an allowable claim, and therefore, are also allowable, and improperly rejected. Thus, the rejections of Claims 2 - 21 should be withdrawn. Moreover, Claims 2 - 21 are dependent from Claim 1, an allowable claim by reason of the arguments presented above, and therefore Claims 2 - 21 must also be allowable. Thus, Claims 2 – 21 are allowable, the rejections are improper, and they should be withdrawn. MPEP 2143.

With regard to Claim 3 the Examiner states:

"Butterworth and Pree disclosed the computing system of claim 1 wherein communication between the software components comprises asynchronous communications (Butterworth: column 12, line 20 to column 16, line 14; column 7, line 67 to column 8, line 8; column 18, lines 18-23; column 18, line 65 to column 19, line 3)."

Applicant respectfully contends that neither Butterworth nor Pree teach or disclose each element of the invention. Specifically, neither Butterworth nor Pree teach or disclose, "wherein communication between the software components comprises asynchronous communications". To support the rejection, the Examiner relies on the disclosure of Butterworth: column 12, line 20 to column 16, line 14; column 7, line 67 to column 8, line 8; column 18, lines 18-23; column 18, line 65 to column 19, line 3). Applicants respectfully disagree. At not one of the cited references does Butterworth teach or disclose "communication between the software components comprises asynchronous communications. In fact, at one of the cited references the teachings of Butterworth are drawn to an example of partitioning an application not communications between software components as claimed. Therefore, because neither Butterworth nor Pree disclose or teach one or more elements of the invention they cannot render Applicants' claims unpatentable. Thus, Claims 3 is allowable, the rejections are improper, and they should be withdrawn.

With regard to Claim 5 the Examiner states:

"Butterworth and Pree disclosed the computing system of claim 1 wherein the at least one extensible tier is a set of extensible tiers (Butterworth: column 11, lines 63-67), further comprising a set of logical connections comprising sequencing and messaging information between a first one of the extensible tiers and at least one other tier of the extensible set of tiers, whereby each tier in the extensible set of tiers is capable of communicating with any other tier through one or more tier interfaces (Butterworth: column 13, line 40 to column 14, line 4; and inherent to tier architecture).

Applicant respectfully contends that neither Butterworth nor Pree teach or disclose each element of the invention. Specifically, neither Butterworth nor Pree teach or disclose, "a set of logical connections comprising sequencing and messaging information between a first one of the extensible tiers and at least one other tier of the extensible set of tiers, whereby each tier in the extensible set of tiers is capable of communicating with any other tier through one or

more tier interfaces". Applicants once again respectfully suggest that the Examiner has mischaracterized Applicants' invention and the cited references. To support the rejection, the Examiner relies on the disclosure of Butterworth: column 11, lines 63 – 67 and column 13, line 40 to column 14, line 4. At not one of the cited references does Butterworth teach or disclose **"messaging information between a first one of the extensible tiers and at least one other tier"**. In fact, the cited references pertain to addressing the computing environment of a tiered environment. There is no teaching at all with regard interfaces between tiers. Furthermore, the citation is further evidence of the mischaracterization of Butterworth, not pertaining to creation of a software application, but the partitioning of an application to multiple environments. Therefore, because neither Butterworth nor Pree disclose or teach one or more elements of the invention, they cannot render Applicants' claims unpatentable. Thus, Claim 5 is allowable, the rejections are improper, and they should be withdrawn.

With regard to Claim 22 the Examiner states:

"Butterworth disclosed the method for generating a software application in a computing system for creating an extensible N-tiered software application comprising at least one processing unit; at least one memory store operatively connected to the processing unit (*Figures 1-10*); extensible N-tiered software (*column 5, lines 9-40; column 16, line 37 to column 19, line 35*), comprising tier rules (*column 5, lines 16-35; lines 21-23*), and application assembly rules (*column 16, lines 43-49*), the N tiered software being executable within the at least one processing unit (*Figures 1-10*); and a predetermined set of initial extensible tiers capable of residing in the memory store, each tier of the predetermined set of extensible tiers having a given structure, the set of extensible tiers further comprising a logically grouped set of a predetermined number of the executable software components (*column 12, line 20 to column 16, line 14; column 7, line 67 to column 8, line 8*), the method comprising:

- a. determining a set of application requirements (*column 16, lines 43-49*);
- d. defining a set of tiers to logically model the application requirements (*column 5, lines 9-55; and column 12, line 20 to column 16, line 14*);
- c. selecting tiers from the predetermined set of tiers to satisfy the defined set of tiers (*column 5, lines 21-23; column 12, line 20 to column 16, line 14*);

- f. for tiers not within the predetermined set of tiers needed to satisfy the defined set of tiers, creating new tiers (column 5, lines 25-35);
- h. creating a software application by assembling the predetermined set of tiers according to the application assembly rules (column 17, lines 26-33; column 12, line 20 to column 16, line 14);
- i. whereby the software application satisfies the set of application requirements (column 16, lines 43-49)."

"Butterworth did not explicitly state predetermined set of software component rules; an inventory of executable software components, each software component further comprising a given structure and an external interface and further capable of communicating with at least one other software component; for each of the set of application requirements, reviewing the inventory of software components for software components that match at least one of the set of application requirements; for each application requirement in the set of application requirements for which a software component match does not exist in the software component inventory, obtaining a software component that does match that application requirement; and associating each of the matching software components with at least one tier of the defined set of tiers according to a framework associated with that tier. Pree demonstrated that it was known at the time of invention to utilize libraries of interchangeable components, either new or existing in order to fill an application or "tier" (individual applications) requirements (entire document). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Butterworth's tier development system with frameworks (component rules, inventories of components new and existing for requirements; and associating components with at least one tier "application zone") as found in Pree's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide an improved productivity and software development automation (Pree: Abstract)."

With regard to Claim 22, Applicant respectfully contends that neither Butterworth nor Pree teach or disclose each element of the invention. Specifically, neither Butterworth nor Pree teach or disclose, "extensible N-tiered creation software, comprising a predetermined set of software component rules, tier rules, and application assembly rules". To support the rejection, the Examiner relies, on the disclosure of Butterworth at Col. 5 lines 9 – 15; column 16, line 37 to column 19, line 35), comprising tier rules (column 5, lines 16-35; lines 21-23), and application assembly rules (column 16, lines 43-49. However, it is evident from the disclosure of Butterworth, that there is no disclosure whatsoever regarding a **predetermined set of software**

component rules, tier rules, and application assembly rules in Butterworth at Col. 5, lines 9 – 40. Similarly, at column 16, line 37 to column 19, line 35 Butterworth includes no teaching with respect to the claimed elements. Butterworth specifically addresses **partitioning** of an application program and allocating the partitions of the application to one or more target computers. See Col 5 lines 9 – 23. Conversely, Applicants' invention is directed to the creation of software applications based on a tiered architecture **with a selected framework and defined interfaces**. In addition, Butterworth actually teaches away from the claimed elements because its teachings with respect to partitioning an application employ no structured rules. See specifically Col. 17, lines 61 to Col. 18 line 1 "The...approach to partitioning is **NOT** based on ...rules or some other predefined category of application functionality. Forte does not require development programmers to fit their applications into one or several predefined molds..."

Moreover, continuing with Claim 22, neither Butterworth nor Pree teach or disclose, "tier rules, and application assembly rules". To support the rejection, the Examiner relies on the disclosure of Butterworth at column 5, lines 16-35;. However, it is evident from the disclosure of Butterworth, that there is no disclosure whatsoever regarding at least one extensible tier in Butterworth at Col. 5, lines 16-35. In fact, the disclosure of Butterworth at Col. 5, lines 16-35 is directed to "identifying an environment for a selected object to operate each object assigned to a partition, each partition assigned to a target computer". Clearly, the teachings of Butterworth are directed to **partitioning application** onto several target computers, *nothing* in the teaching is directed to an extensible tier, tier rules, and application assembly rules.

Furthermore, neither Butterworth nor Pree teach or disclose, "each tier of the predetermined set of extensible tiers having a given structure, the set of extensible tiers further comprising a logically grouped set of a predetermined number of the executable software components". To support the rejection, the Examiner relies on the disclosure of Butterworth at column 12, line 20 to column 16, line 14; column 7, line 67 to column 8, line 8. Applicants respectfully disagree. At not one of the cited references does Butterworth teach or disclose any of the cited claim elements. For example, at column 12, line 20 to column 16, line 14 Butterworth discusses an illustration of **partitioning** an application, there is no disclosure with respect to a set of extensible tiers.

Therefore, because neither Butterworth nor Price disclose or teach one or more elements of the invention they cannot render Applicants' claims unpatentable. Thus, Claims 22 is allowable, the rejections are improper, and they should be withdrawn.

In addition, Claims 22 - 45, and 46 -50 include the same or similar limitations as Claim 22, an allowable claim, and therefore, are also allowable, and improperly rejected. Thus, the rejections of Claims 22 - 45 and 46 -50 should be withdrawn. Moreover, Claims 22 - 45 are dependent from Claim 22, an allowable claim by reason of the arguments presented above, and therefore Claims 22 - 45 must also be allowable. Thus, Claims 22 - 45 and 46 -50 are allowable, the rejections are improper, and they should be withdrawn. MPEP 2143.

The arguments and amendments presented herein are made for the purposes of better defining the invention, rather than to overcome the rejections for patentability. The claims have not been amended to overcome the prior art and therefore, no presumption should attach that either the claims have been narrowed over those earlier presented, or that subject matter or equivalents thereof to which the Applicants are entitled has been surrendered. Allowance of the claims is respectfully requested in view of the above remarks. Moreover, no amendments as presented alter the scope of the claimed invention and therefore cannot necessitate a new grounds rejection.


It is believed that the foregoing remarks are fully responsive to the Office Action and that the claims herein should be allowable to the Applicants. In the event the Examiner has any queries regarding the instantly submitted response, the undersigned respectfully request the courtesy of a telephone conference to discuss any matters in need of attention.

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If there are additional charges with respect to this matter or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully Submitted,

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